USSR

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VOL'KENSHTEYN, F. F., Fiziko-Khimiya Poverkhnosti Poluprovodnikov, Izd-vo Nauka, 1973, 400 pp

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16/16

USSR

UDC 541.128

VOL'KENSHTEIN, F. F., PEKA, G. P., MALAKHOV, V. V., Institute of Physical Chemistry, USSR Academy of Sciences, Moscow

"Effect of Adsorption on Luminescence of Semiconductors. I. Recombination Luminescence"

Moscow, Russian, Kinetika i kataliz, vol 14, No 4, Jun-Aug 73, pp 1052-1057

Abstract: Chemisorbed particles may affect the recombination luminescence of semiconductors by causing a change on the surface or they may act as surface centers of recombination. These effects were studied with CdS monocrystals, the adsorbates being water vapor, air, oxygen, and ozone. Changes in the luminescence intensity due to an external electric field and to adsorption and changes in conductivity due to adsorption were measured. All the adsorbates studied caused a decrease in the photoconductivity of the CdS crystals and quenching of the luminescence. No new spectral bands were recorded. With the same photoconductivity change, luminescence quenching due to adsorption was either the same as or greater than that due to the transverse electric field. The adsorption effect was greater in the red (0.76-0.78 μm) than in the infra-red (1.03 μm).

1/1

USSR UDC 541.127:541.14+541.515

VOL'KENSHTEYN, F. F., MARKIN, Yu. A., SIVOV, Yu. A., and STYROV, V. V., Institute of Physical Chemistry, Academy of Sciences USSR, and Tomsk Polytechnic Institute

"Theory of Radical-Recombination Luminescence. 3. Kinetics of Radical-Recombination Luminescence"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 8, Aug 71, pp 1664-1672

Abstract: The kinetics of the build-up of radical-recombination luminescence (RRL) were first studied by V. A. SOKOLOV and A. N. GORBAN'. The present article is a continuation of these studies. Experiments were performed on a vacuum device with a mercury diffusion pump, permitting a vacuum of 10^{-5} torr. RRL was excited by atomic hydrogen obtained by means of a high-frequency discharge. Kinetic curves were plotted in the 300-550°K range at various hydrogen pressures. Powdered phosphors were applied from an alcohol suspension to glass substrates. It was found that the character of the kinetic isotherms differs for a very clean surface and one that is insufficiently clear. The kinetic curve rises in the former case, falls in the latter case due to the fact that the surface holds residues of pre-chemisorbed hydrogen in the

charged state, the hydrogen being gradually removed from the surface as a result of the recombination reaction. After RRL halts, the content of the charged form of chemisorption on the surface first rises, then begins to decline as a result of desorption. The initial ascending branch of the curve is due to the fact that the system approaches steady-state electronic equilibrium in the absence of recombinations. In the case where the discharge is interrupted, then is on again after a certain pause, the "memory effect" is observed. The character of the RRL kinetics here depends on the length of the pause, due to the fact that the quantity of chemisorbed hydrogen remaining on the surface after the pause varies according to the pause length.

The authors thank V. A. SOKOLOV for discussing the results of the work and for his guidance in the experimental portion.

2/2

Luminescence

USSR UDC 541.12.036 + 541.515 + 535.37

VOL'KENSHTEYN, F. F., Institute of Physical Chemistry, Moscow, Academy of Sciences USSR

"Theory of Radical-Recombination Luminescence in Semiconductors. II. Influence of Temperature and Pressure on Intensity of Radical-Recombination Luminescence"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 6, Jun 70, pp 1252-1255

Abstract: Radical-recombination luminescence (RRL) originates in chemical transformations occuring on the surface of a crystallophore. In this study the basic band of RRL was examined as a function of the temperature and pressure. With some assumptions the position of Fermi levels was calculated as a function of both temperature and pressure. The intensity of luminescence in a linear function of the pressure at low pressures, while its temperature function exhibits a maximum. These theoretical calcula-

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USSR

VOL'KENSHTEYN, F. F., Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 6, Jun 70, pp 1252-1255

tions were found in agreement with experimental data.

2/2

USSR UDC 543.42 + 541.515 + 535.37

VOL'KENSHTEYN, F. F., SOKOLOV, V. A., Institute of Physical Chemistry, Moscow, Academy of Sciences USSR

"Theory of Radical-Recombination Luminescence in Semiconductors. I. Spectral Structure of Radical-Recombination Luminescence"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 6, Jun 70, pp 1247-1252

Abstract: Radical-recombination luminescence (RRL) is a relatively new field of investigation and in this paper an attempt is made to develop quantitative theory for it. The RRL spectrum consists of two bands, as a rule, one -- the "basic" -- is also observed in photo luminescence, while the other -- the "supplementary" -- appears only in RRL. According to the proposed mechanism, the act of a recombination of free atoms or radicals on the surface results in an appearance of a pair of free electron-free hole. If the recombination of the electron and the hole accompanied by release of a quantum goes through, a level of an activator, the "basic" band appears. If this recombination takes place through the local level of the chemisorbed atom itself (the radical),

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VOL'KENSHTEYN, F. F., et al, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 6, Jun 70, pp 1247-1252

the "supplementary" band appears. The experimental data, i.e. dependence of the "basic" band on the nature of the activator and independence of the nature of gas, and conversely dependence of the "supplementary" band on the nature of the surrounding medium and independence of the activator, fit this model well.

2/2

1/2 019 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--PROBLEM OF SURFACE IN THE THEORY OF SOLIDS -U-

AUTHOR--VOLKENSHTEYN, F.F.

COUNTRY OF INFO--USSR

SOURCE--KINET. KATAL. 1970, 11(2), 395-402

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--SURFACE PROPERTY, SOLID STATE, CRYSTAL LATTICE STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/0931 STEP NO--UR/0195/70/011/002/0395/0402

CIRC ACCESSION NO--AP0131517

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2/2 019 UNCLASSIFIED

CIRC ACCESSION NO--AP0131517 PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A DISCUSSION OF PROBLEMS OF THE THEORY OF SOLIDS ON A TRANSITION FROM THE INFINITE LATTICE TO THE LIMITED DIMENSIONS OF (NONMETALLIC) CRYSTALS. FACILITY: INST. FIZ. KHIM., MOSCOW, USSR.

UNCLASSIFIED

USSR

FISHMAN, S. N., CHERNEYKIN, V. A., and VOL'KENSHTEYN, M. V., Institute of Molecular Biology, USSR Academy of Sciences, Moscow

"Role of Ion Exchange Processes in the Mechanism of Altered Na Permeability of Excitable Membranes"

Moscow, Biofizika, Vol 18, No 5, Sep/Oct 73, pp 834-838

Abstract: Experimental studies have led to the conclusion that pores of excitable membranes may exist in a state which is permeable to Na, as well as impermeable. In the impermeable state they can bind Ca. It is now suggested that yet another state of the pores may exist in which Ca is replaced by K, the extent of which depends on K concentration in the incubate. From the latter state the pores may become permeable to Na. In absence, an electrochemical gradient may be established along which the positive ions are conducted.

1/2 023 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--CONFORMATIONAL CHARACTERISTICS OF POLYMORPHOUS OPTICALLY ACTIVE MACROMOLECULES: A STATISTICAL ZIGZAG MODEL -U-

AUTHOR-(03)-BIRSHYTEYN, T.M., ZUBKOV, V.A., VOLKENSHTEYN, M.V.

COUNTRY OF INFO--USSR

SOURCE--J. POLYM. SCI., PART A-2 1970, 8, 177-90

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--OPTIC PROPERTY, MOLECULAR STRUCTURE, MODEL, OPTIC ACTIVITY, STEREOCHEMISTRY, FREE ENERGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/0997 STEP NO--US/0000/70/008/000/0177/0190

CIRC ACCESSION NO--AP0055688

UNCLASSIFIED

2/2 023 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0055688

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONFORMATIONAL PROPERTIES OF OPTICALLY ACTIVE MACROMOLS. ARE CONSIDERED. A STATISTICAL ZIGZAG MODEL IS USED FOR THE CALCN. OF AVERAGED PHYS. PROPERTIES. THE MACROMOL IS CONSIDERED TO CONSIST OF SEGMENTS OF 2 TYPES WITH A STATISTICAL DISTRIBUTION OF LENGTHS. THE EXPRESSIONS FOR THE MEAN SQUARE OF THE END TO END VECTOR H PRIME2 AND THE DIPOLE MOMENT MU PRIME2 AND ALSO OF THE MEAN OPTICAL ANISOTROPY DELTA A AND THE ANISOTROPY OF THE OPTICAL ROTATION TENSOR DELTA G WERE OBTAINED IN THE CASES OF FREELY JOINTED AND FREELY ROTATING SEGMENTS. THE EQUATIONS WERE APPLIED TO THE PROBLEM OF THE HELIX COIL TRANSITION. IN THE CASE OF POLY-ALPHA-OLEFINS, THE VALUES OF H PRIME2, MU PRIME 2, AND DELTA A, ARE LARGER THAN CORRESPONDING VALUES FOR TYPICAL OPTICALLY INACTIVE MACROMOLS. THE ANISOTROPIES DELTA A AND DELTA G OF 2 POLY, ALPHA-OLEFINS OF SIMILAR STRUCTURES WERE CALCD. THE POLARIZABILITY THEORY OF OPTICAL ACTIVITY WAS USED FOR THE CALCNS. OF DELTA G. THE VALUES OBTAINED FOR DELTA A ARE SIMILAR, BUT THE VALUES OF DELTA G DIFFER. THE POSSIBILITY OF OBTAINING INFORMATION ABOUT THE STRUCTURE OF OPTICALLY ACTIVE MACROMOLS. IN SOLN. BY A STUDY OF ANISOTROPY OF THE OPTICAL ROTATION TENSOR IS CONSIDERED.

UNCLASSIFIED

USSR

VOL'KENSHTEYN, M. V. and FISHMAN, S. N., Institute of Molecular Biology, Academy of Sciences USSR

"Theory of Transport Phenomena in Biological Membrane. II. Active Ion Transport"

Moscow, Biofizika, No 1, 1970, pp 31-37

Abstract: The authors propose a model that involves both the passive and the active transport of sodium and potassium ions in biological membranes. The mechanism of active transport is shown to have features in common with the mechanism of passive transport. It differs, however, in the force that ensures the directed movement of ions (it is the gradient of electrochemical potential of the particular type of ion in passive transport, whereas it is the gradient of potential of the complex created by the biochemical reaction in active transport) as well as in the cooperative nature of the metabolic enzyme reaction by which ions are transported from one center to another.

1/2 019 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--THE THEORY OF TRANSPORT PHENOMENA IN BIOLOGICAL MEMBRANES: II. THE ACTIVE TRANSPORT OF IONS -U-

AUTHOR-(02)-VOLKENSTEIN, M.V., FISHMAN, S.N.

COUNTRY OF INFO--USSR

SOURCE--BIOCHIM BIOPHYS ACTA 203(1): 10-16. ILLUS. 1970.

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TRANSPORT PHENOMENON, SODIUM, POTASSIUM, ENZYME

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605013/F07 STEP NO--NE/0000/70/203/001/0010/0016

CIRC ACCESSION NO--AP0140439

UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--04DEC7U

CIRC ACCESSION NO--AP0140439

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A MODEL IS SUGGESTED COUPLING THE PROCESSES OF THE PASSIVE AND ACTIVE TRANSPORT OF THE NA PRIME POSITIVE AND K PRIME POSITIVE IN BIOLOGICAL MEMBRANES. IT IS SHOWN THAT THE MECHANISM OF ACTIVE TRANSPORT HAS FEATURES COMMON TO THE MECHANISM OF PASSIVE TRANSPORT. HOWEVER, IT DIFFERS IN THE DRIVING FORCE MAINTAINING THE DIRECTED FLOW OF IONS. IN THE CASE OF PASSIVE TRANSPORT, THE DRIVING FORCE IS THE GRADIENT OF ELECTROCHEMICAL POTENTIAL OF THE IONS OF GIVEN SPECIES; IN THE CASE OF ACTIVE TRANSPORT IT IS THE GRADIENT OF THE POTENTIAL OF THE COMPLEX RESULTING FROM THE BIOCHEMICAL REACTION. THE SPECIFIC FEATURE OF ACTIVE TRANSPORT IS THE COOPERATIVITY OF ENZYMATIC EXCHANGE REACTION, DETERMINING THE TRANSMISSION OF IONS FROM ONE CENTER TO ANOTHER. FACILITY: INST. MOL. BIOL., ACAD. SCI. USSR, MOSCOW, USSR.

UNCLASSIFIED

1/2 028 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--THE THEORY OF TRANSPORT PHENOMENA IN BIOLOGICAL MEMBRANES: I. THE PASSIVE TRANSPORT AND RESTING POTENTIAL -U-

AUTHOR-(02)-VOLKENSTEIN, M.V., FISHMAN, S.N.

COUNTRY OF INFO--USSR

SOURCE--BIOCHIM BIOPHYS ACTA 203(1): 1-9. ILLUS. 1970.

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SODIUM, POTASSIUM, TRANSPORT PHENOMENON, ION EXCHANGE, THERMODYNAMIC PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605013/F07 STEP NO--NE/0000/70/203/001/0001/0009

CIRC ACCESSION NO--AP0140440

UNCLASSIFIED

2/2 028 UNCLASSIFIED PROCESSING DATE--04DEC79

CIRC ACCESSION NO--AP0140440

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE THEORETICAL STUDY OF THE PASSIVE TRANSPORT OF NA PRIME POSITIVE AND K PRIME POSITIVE ACROSS BIOLOGICAL MEMBRANES IS BASED ON THE ASSUMPTION THAT BOTH KINETIC AND THERMODYNAMIC PROPERTIES OF MEMBRANE INFLUENCE THE FLUX OF IONS. TWO MODELS WERE INVESTIGATED. MODEL A SUGGESTS THE EXISTENCE OF 2 KINDS OF ION EXCHANGE CENTERS, 1 BINDING MAINLY NA PRIME POSITIVE AND THE OTHER MAINLY K PRIME POSITIVE. MODEL B SUGGESTS ONLY 1 TYPE OF ION EXCHANGE CENTER WITH A DIFFERENT AFFINITY TO NA PRIME POSITIVE AND TO K PRIME POSITIVE. ONLY MODEL A PROVIDES THE EQUATION WHICH AGREES WITH EXPERIMENTAL DATA CONCERNING THE DEPENDENCE OF RESTING POTENTIAL ON CONCENTRATION. FACILITY: INST. MOL. BIOL., ACAD. SCI. USSR, MOSCOW, USSR.

UNCLASSIFIED

1/2 009 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--REGULATORY ROLE OF ENZYMES AND ENZYMIC CONTROL -U-

AUTHOR--VOLKENSHTEYN, M.V.

COUNTRY OF INFO--USSR

SOURCE--BIOFIZIKA 1970, 15(2), 215-24

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ENZYME, REGULATOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/0271 STEP NO--UR/2017/70/015/002/0215/0224

CIRC ACCESSION NO--AP0135767

UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--20NOV70
CIRC ACCESSION NO--AP0135767
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REGULATORY ROLE OF ENZYMES AND MECHANISMS OF ENZYMIC CONTROL WERE STUDIED. ALLOSTERISM, COOPERATIVENESS, AND THE MOL. PROPERTIES OF PROTEINS ARE CONSIDERED. A POSSIBLE MECHANISM IS PROPOSED FOR RESONANCE COOPERATIVE INTERACTIONS OF SUBUNITS OF A PROTEIN POSSESSING QUATERNARY STRUCTURE, AND THE CORRESPONDING FREE ENERGY CALCNS. ARE PRESENTED. IT IS SUGGESTED THAT ENZYME CONFORMATION IS CONTROLLED BY THE ELECTRONIC STATES OF VARIOUS COFACTORS (PROSTHETIC GROUPS, COENZYMES, ATOMS OF TRANSITION METALS, SMALL IONS SUCH AS K PRIME POSITIVE, NA PRIME POSITIVE, CA PRIME2 POSITIVE, MG PRIME2 POSITIVE). THIS HYPOTHESIS WAS SUPPORTED IN TESTS WITH MYOGLOBIN AND HB IN WHICH THE ELECTRONIC STATE OF THE COFACTOR WAS CHANGED, AND THE CORRESPONDING CONFORMATIONAL CHANGES IN THE PROTEIN WERE OBSD. BY MEANS OF MAGNETO OPTICAL ROTATION MEASUREMENTS.
FACILITY: INST. MOL. BIOL., MOSCOW, USSR.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--THEORY OF TRANSPORT PHENOMENA IN BIOLOGICAL MEMBRANES -U-

AUTHOR-(02)-VOLKENSHTEYN, M.V., FISHMAN, S.N.

COUNTRY OF INFO--USSR

SOURCE--BIOFIZIKA 1970, 15(1), 31-7

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CELL MEMBRANE, SODIUM COMPOUND, POTASSIUM COMPOUND, LIPOPROTEIN, BIOPOTENTIAL, ION EXCHANGE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/0631 STEP NO--UR/0217/70/015/001/0031/0037

CIRC ACCESSION NO--AP0117857
UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--16OCT70
CIRC ACCESSION NO--AP0117857
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A MECHANISM OF PASSIVE AND ACTIVE MIGRATIONS OF NA PRIME POSITIVE AND K PRIME POSITIVE IN BIOL. MEMBRANES IS PROPOSED. THE PASSIVE MIGRATION IS CAUSED BY THE ELECTROCHEM. POTENTIAL GRADIENT OF K PRIME POSITIVE AND NA PRIME POSITIVE, WHEREAS THE ACTIVE MIGRATION IS CAUSED BY THE ELECTROCHEM. POTENTIAL GRADIENT OF A COMPLEX OF NA PRIME POSITIVE OR K PRIME POSITIVE WITH A LIPOPROTEIN. THE MIGRATIONS TAKE PLACE IN ION EXCHANGE CENTERS SITUATED IN THE MEMBRANE. THE PASSAGE OF K PRIME POSITIVE AND NA PRIME POSITIVE FROM ONE CENTER TO ANOTHER IS A METABOLIC ENZYMIC REACTION. FACILITY: INST. MOL. BIOL., MOSCOW, USSR.

UNCLASSIFIED

VOLKENSHTEYN, M. V.

Acc. Nr: AP0044384 Ref. Code: UR 0463

PRIMARY SOURCE: Molekulyarnaya Biologiya, 1970, Vol 4, Nr 1, pp 118-128

INVESTIGATION OF HISTONE STRUCTURE

Ramm, Ye. I.; Birshteyn, T. M.; Bolotina, I. A.; Vorob'yev, V. I.; Dmitrenko, L. V.; Nekrasova, T. N.; Vol'kenshteyn, M. V.

Institute of Cytology and Institute of High-Molecular Weight Compounds, Academy of Sciences, USSR, Leningrad and Institute of Molecular Biology, Academy of Sciences, USSR, Moscow

The structure of four histone fractions (f_1, f_2 (a), f_2 (b), f_3) has been studied by the methods of optical rotatory dispertion, potentiometric titration and viscometry. The analysis of the data obtained made it possible to draw a conclusion that histones are not globular proteins. The dependence of reduced viscosity on the charge of the molecule and the ionic strength of the solution showed that the dimensions of the histone molecules depend to a large extent upon the forces of electrostatic interaction. This suggests that the histone molecules are conformationally flexible and probably exhibit the conformation of a statistical coil with the incorporation of helical regions.

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REEL/FRAME 19771000

02

AP0044384

The potentiometric titration curves have been obtained for all the histone fractions and have been used for calculating the number of ionizable groups, for determining their pK' and the change in the mean overall charge of the molecules with the pH alteration of the medium. The effect of pH and the ionic strength of the solution on the α-helix content of various histone fractions was studied. The data obtained were compared and a conclusion was drawn about the non-uniform distribution of the charged groups in the histone molecules. On one hand, histones contain at neutral pH coil shaped sequences enriched with basic amino acid residues with high density of the positive charge and on the other hand, regions capable to form helical structures and containing both acid and basic amino acid residues. A model is proposed describing the structure of histones.

The important differences between histone fractions were shown to exist mainly due to the distribution of the charges along the chain.

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19771001

USSR UDC 577.3

FESENKO, Ye. Ye., KULAKOV, V. N., LYUBARSKIY, A. L., and VOL'KENSHTEYN, M. V.

"Three-Phase Kinetics of the Recombination of Myoglobin With Carbon Monoxide at Low Temperature"

Moscow, Doklady Akademii Nauk SSSR, Vol 205, No 2, 1972, pp 485-487

Abstract: A study of the recombination of myoglobin (Mb) with CO after photodissociation showed that the reaction proceeded via three pathways. These were designated as very fast, fast, and slow reactions. The energy, the entropy, and the enthalpy of activation were calculated for each reaction in both glycerine and a water-glycerine mixture. The rate constant and relative rates of reaction are given for selected temperatures between -100°C and 0°C. Conformational shifts in $Mb \cdot C_o$ complexes were described.

Biophysics

USSR

FISHMAN, S. N., CHERNEYKIN, V. A., and VOL'KENSHTEYN, M. V., Institute of Molecular Biology, Academy of Sciences USSR, Moscow

"Molecular Mechanism of the Initiation of Muscle Contraction"

Moscow, Biofizika, No 6, 1972, pp 1,061-1,067

Abstract: The authors propose a mathematical model that describes the kinetics of muscle fiber response to the application of depolarizing potential to the membrane. The model assumes that the development of isometric contraction is limited to two main reactions: (a) desorption of Ca^{++} from the reticulum due to the charge in the electrical field and (b) formation of an actomyosin bridge and subsequent conformation change in protein. The behavior of the model system in time is examined in three situations: (a) after the application of fixed potential to the membrane, (b) after brief polarization of the membrane, and (c) after stimulation of the muscle fiber by a series of short impulses (tetanus).

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1/2 020 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--HALL EFFECT IN A TERBIUM SINGLE CRYSTAL -U-

AUTHOR-(02)-FEDOROV, G.V., VOLKENSHTEYN, N.V.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(5), 1374-9

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--SINGLE CRYSTAL, TERBIUM, HALL EFFECT, THERMAL EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/0167 STEP NO--UR/0181/70/012/005/1374/1379

CIRC ACCESSION NO--AP0129423
UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0129423

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BY USING 2 SPECIMENS CUT FROM SINGLE CRYSTAL TB (99.9PERCENT PURE) AT 4.2-350DEGREESK AND AT MAGNETIC INDUCTION (B) LESS THAN OR EQUAL TO 34 KG, MEASUREMENTS WERE CARRIED OUT OF THE HALL EFFECT. SP. HALL EMF. FOR THE SPECIMEN WITH MAGNETIC FIELD (H) PARALLEL TO THE (0001) DIRECTION AT ALL TEMPS. DEPENDS LINEARLY ON INDUCTION IN THE SPECIMEN. FOR SPECIMENS WITH H PARALLEL TO (1 BAR 2 10) IN THE REGION OF THE EXISTENCE OF THE FERROMAGNETIC STATE, THE DEPENDENCE OF SP. HALL EMF. ON B HAS THE FORM CHARACTERISTIC FOR FERROMAGNETS. IN THE PARAMAGNETIC REGION, THE SPONTANEOUS, (R SUBS) AND CONVENTIONAL (R SUB0) HALL COEFFS, FOR BOTH SPECIMENS WERE SEPD., AND THE PRESENCE WAS ESTABLISHED OF ANISOTROPY OF THESE COEFFS. IN THE FERROMAGNETIC REGION, THIS SEPN. WAS CARRIED OUT ONLY FOR SPECIMENS WITH H PARALLEL TO (1 BAR 2 10). BOTH COMPONENTS OF THE HALL COEFF. CHANGE SIGN TWICE WITH DECREASING TEMP. FACILITY: INST. FIZ. METAL., SVERDLOVSK, USSR.

UNCLASSIFIED

1/2 032 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--ON THE FERMI SURFACE IN IRIDIUM -U-

AUTHOR-(03)-VOLKENSHTEYN, N.V., NOVOSYCLOV, V.A., STARTSEV, V.YE.

CCUNTRY OF INFO--USSR

SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58, NR 5, PP 1609-1611
DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--MAGNETORESISTANCE, ANISOTROPY, HALL EFFECT, SINGLE CRYSTAL, IRIDIUM, FERMI SURFACE, ELECTRON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/0001 STEP NO--UR/0056/70/058/005/1609/1611

CIRC ACCESSION NO--AP0127651
UNCLASSIFIED

2/2 032 UNCLASSIFIED PROCESSING DATE--20NOV70
CIRC ACCESSION NO--AP0127651
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TRANSVERSE MAGNETORESISTANCE (ANISOTROPY AND FIELD DEPENDENCES) AND HALL EFFECT IN A IRIDIUM SINGLE CRYSTAL ARE INVESTIGATED AT LOW TEMPERATURES AND MAGNETIC FIELDS UP TO 45 KOE. THE MEASUREMENT RESULTS INDICATE THAT IRIDIUM IS A "NONCOMPENSATED" METAL AND APPARENTLY POSSESSES A CLOSED FERMI SURFACE CONSISTING OF ELECTRON AND HOLE SHEETS. THE RESULTS ARE COMPARED WITH THE THEORETICAL MODEL OF THE FERMI SURFACE FOR THIS METAL.
FACILITY: INSTITUT FIZIKI METALLOV, AKADEMII NAUK SSSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520016-0"

UDC 632.95

USSR

SHCHEGLOV, YU. V., NIKISHIN, G. I., DYUSENOV, M. I., VOL'KENSHTEYN, YU. B., SALAMANDRA, L. K., and KOZINA, L. S., All-Union Research Institute of Plant Pathology and Institute of Organic Chemistry, Academy of Sciences USSR

"A Herbicide"

USSR Author's Certificate No 252757, filed 11 June 68, published 25 Feb 70 (From RZh-Khimiya, No 22, 25 Nov 70, Abstract No 22 N708 P by L. Shchelestenko)

Translation: It is suggested that bis-trichlorallyl esters of dicarboxylic acids be used as a herbicide. They have the general formula: $Cl_2C = CClCH_2OOC(CH_2)_n COOCH_2CCl = CCl_2$ where N = an integer from 0 to 2.

1/1

UDC 669.71.018.9.4

USSR

TSABROV, N. D., VINOKUROV, N. D., MARCHENKO, A. M., PECHENEV, V. S., KOPYTOV, G. A., VOL'KHIN, G. D., BERNSHTEYN, G. G.

"Experiment in Operating a Vacuum Mixer"

Tekhnol. legkikh splavov. Nauchno-tekhn. byul VILSa (Light Alloy Technology. Scientific and Technical Bulletin of the VILS), 1970, No 5, pp 26-31 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G206)

Translation: The application of a vacuum mixer for evacuating liquid alloys based on aluminum is expedient and has a number of advantages over the methods used earlier: the gas saturation of the metal is reduced appreciably; the technological plasticity of the ingots is increased; an increase in the casting rate by 10-15% is possible; and the number of defects during ultrasonic control of the products is reduced sharply. The schematic of the mixer and its operation are described. There are 4 illustrations and 1 table.

1/1

1/2 014 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--HETEROGENEOUS ION EXCHANGE REACTIONS IN ZINC SULFIDE, COPPER SULFATE AND WATER, ZINC SULFIDE, COPPER SULFATE, SULFURIC ACID AND

AUTHOR-(02)-LVOVICH, B.I., VOLKHIN, V.V.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(2), 520-4

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--TERNARY FLUID SYSTEM, AQUEOUS SOLUTION, ION EXCHANGE, ZINC SULFIDE, COPPER SULFATE, SULFURIC AICD, HYDROXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0792 STEP NO--UR/0078/70/015/002/0520/0524

CIRC ACCESSION NO--AP0104238

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520016-0"

2/2 014 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0104238

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CU PRIME2 POSITIVE IS SORBED BY ZNS AND ZN(OH) SUB2 PPT. MAINLY DUE TO THE ION EXCHANGE REACTIONS QA SUBM B SUBN PLUS MN C PRIMEQ POSITIVE EQUALS NC SUBM B SUBQ PLUS MQA PRIMEN POSITIVE. SIMULTANEOUSLY WITH THIS, OTHER REACTIONS OCCUR AND AFFECT THE DISTRIBUTION OF CU PRIME2 POSITIVE BETWEEN THE SORBENT AND THE SOLVENT. IN A NEUTRAL SOLN., ZNS IS OXIDIZED TO ZN PRIME2 POSITIVE AND SO SUB4 PRIME2 NEGATIVE. ZN PRIME2 POSITIVE, AND (H SUB2 S) SUBX FORM IN AICDIC MEDIA. IN THE ZN(OH) SUB2 SYSTEM, CU(OH) SUB2 (F RMED BY A METATHETIC REACTION) SORBS CUSO.SUB4 FROM THE SOLN. GIVING CRYST. CUSO SUB4 TIMES 3CU(OH) SUB2 AS A FINAL PRODUCT.

UNCLASSIFIED

USSR

UDC 613.6:612.766.1-08

VOL'KHINA, T. P., KAGAN, B. I., and MYASNIKOVA, G. P., Sverdlovsk Scientific Research Institute of Labor Hygiene and Occupational Diseases"

"Physiological Evaluation of the Difficulty of Work"

Moscow, Gigiyean i Sanitariya, No 4, 1971, pp 100-102

Abstract: Various physiological indexes (pulse rate, muscular strength, coordination of movement, reactions to sound and light, attention, and so forth) were investigated as a means of grading the difficulty of the jobs of several categories of workers - lathe operator, machinist, milling machine operator, engineer/programmer - in a pilot machine plant. Pilot plants are characterized by the lack of strict control of the industrial processes, uniqueness of the products, creative nature of the workers' participation, and so forth. Judging primarily by the pulse rate, the lathe operator's job is moderately difficult (90 to 99 beats per minute) while the jobs of the machinist, milling machine operator, and engineer/programmer are light (less than 90 pulse beats per minute). But with regard to nervous strain and fatigue, all four categories of workers are essentially a like, i.e., the work of a lathe operator, machinist, and milling machine operator in a pilot plant is essentially a variety of mental work.

1/1

1/2 010 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--FLAVONOL LEVEL IN HERBARIUM SPECIMENS OF BUPLEURUM STORED FOR DIFFERENT PERIODS OF TIME -U-

AUTHOR-(02)-MINAYEVA, V.G., VOLKHONSKAYA, T.A.

COUNTRY OF INFO--USSR

SOURCE--RAST. RESUR. 1970, 6(1), 107-10

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PROCESSED PLANT PRODUCT, KETONE, BIOLOGIC STORAGE STABILITY, CHEMICAL STABILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/0460 STEP NO--UR/0503/70/006/001/0107/0110

CIRC ACCESSION NO--AP0134228

UNCLASSIFIED

2/2 010 UNCLASSIFIED

CIRC ACCESSION NO--AP0134228 PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PROLONGED STORAGE DID NOT AFFECT THE RELATIVE CONTENT OF FLAVONOLS AND THEIR GLYCOSIDES IN B. AUREUM, B. MULTINERVE, B. BICAULE, AND B. SCORZONERAEFOLIUM.

FACILITY: TSENT. SIB. BOT. SAD, NOVOSIBIRSK, USSR.

UNCLASSIFIED

USSR

VOLKOLUPOVA, R. T.

"Algorithms for Determination of Paths in Modeling Graphs"

Pribory i Sistemy Avtomatiki. Resp. Mezhved. Temat. Nauch.-Tekhn. Sb. [Automation Instruments and Systems. Republic Interdepartmental Thematic Scientific and Technical Collection], 1973, No 26, pp 32-37 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V407, by the author).

Translation: Algorithms are described for determination of paths of fixed lengths in a modeling graph, determination of arbitrary paths of minimum length (with the minimum number of lines). The algorithms deal with network sets. Examples are presented of the solution of the problems studied.

1/1

USSR

VOLKOV, A. A., VOLKOLUPOVA, R. T.

"The Problem of the Use of Methods of Graph Theory for Calculation of Complex Network Systems"

Pribory i Sistemy Avtomatiki. Resp. Mezhved. Temat. Nauch.-Tekhn. Sb. [Automation Instruments and Systems. Republic Interdepartmental Thematic Scientific and Technical Collection], 1973, No 26, pp 38-42 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V408, by the authors).

Translation: The principle of decomposition of graphs modeling complex network systems is studied. A method is suggested for aggregation of subgraphs into a single graph in the process of transformation of initial information on a graph into a system of equations describing the given network system. A method of selection of all and the optimal (according to a given criterion) trees of a graph, as well as calculation of this number, are studied.

1/1

USSR UDC: 51

VOLKONSKIY, V. A., IVANKOV, S. A.

"Theorems on Convergence of Iterative Processes"

Moscow, Mat. metody resheniya ekon. zadach--sbornik (Mathematical Methods of Solving Economics Problems--collection of works), No 3, "Nauka", 1972, pp 37-51 (from RZh-Kibernetika, No 5, May 73, abstract No 5V601 [from the introduction])

Translation: A paper by these authors (RZhMat, 1970, 12V441) showed that an extensive class of iterative procedures used in solving such mathematical problems as finding points of equilibrium in games, finding the minimum of a function, problems of linear and convex programming, finding the root of a regression equation, are equivalent to one another in the mathematical sense. They may be treated as a description in different languages of the same class of iterative processes so that convergence theorems proved, say, for the process of finding points of equilibrium in games, when "translated" into the language of regression equations give

USSR

VOLKONSKIY, V. A., IVANKOV, S. A., Mat. metody resheniya ekon. zadach, No 3, "Nauka", 1972, pp 37-51

theorems on convergence of the method of gradient descent, etc. This paper is devoted to extending the conditions of convergence of this class of processes and its applications.

2/2

USSR

ALEKSEYEV, A. M., VOLKONSIY, V. A., SHAPIRO, A. D.

"Methods of Optimization of Plans by Automatic Formation of Plan Versions and Their Applications"

Ekonomika i Mat. Metody [Economics and Mathematical Methods], 1973, Vol 9, No 1, pp 3-18 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V539, by Yu. Finkel'shteyn).

Translation: Versions of a problem of the following form are studied:

$$\sum_{k=1}^{K}\sum_{j=1}^{J_k} c_j^k x_j^k \to \min, \tag{1}$$

$$\sum_{k=1}^{K}\sum_{j=1}^{J_k} a_{ji}^k x_j^k \geq b_i,\ i=1,\ldots,I, \tag{2}$$

$$\sum_{j=1}^{J_k} x_j^k = 1,\ k=1,\ldots,K, \tag{3}$$

$$x_j^k \geq 0,\ j=1,\ldots,J_k,\ k=1,\ldots,K, \tag{4}$$

$$x_j^k = 0 \text{ or } 1,\ j=1,\ldots,J_k,\ k=1,\ldots,K_1 (K_1 \ll K). \tag{5}$$

1/3

USSR

Alekseyev, A. M., Volkonsiy, V. A., Shapiro, A. D., Ekonomika i Mat. Metody, 1973, Vol 9, No 1, pp 3-18.

Most frequently, model (1)-(5) is used for planning or production of a group of enterprises or branches, both selectionof versions of development of production and for the production program. Recently, formalizations such as (1)-(5) have begun to be applied also to path determination problems.

Calculations using a model make it possible to select the optimal combination of versions. Formation of the file of initial data is usually done manually, sharply limiting the number of versions which can be practically tested. The advantages and disadvantages of multiple-version and "version-less" statements of the problem are discussed. In the opinion of the authors, the multiple-version problem should be given the task of determining interrelationships between objects, while models of individual objects (perhaps of significantly more complex structure) should be used to formulate version in the multiple-version model. The greatest experience in automatic formulation of versions has been accumulated for the case of the linear model -- the tradition here extends back to the Danzig-Wolf decomposition algorithm.

As concerns the solution of the multiple-version problem itself, particular attention is given to the use of estimates in the problem, including integer variables. The methods of utilization of estimates described yield

USSR

Alekseyev, A. M., Volkonsiy, V. A., Shapiro, A. D., Ekonomika i Mat. Metody, 1973, Vol 9, No 1, pp 3-18.

the best results as applied to partially integer problems. The results of solution of a number of practical problems are described briefly: 1) optimal development of the mining fund of the southern Kuznets basin, 2) optimal placement of mobile wood cutting units for cutting of the forest in the flooding zone of the Boguchanskaya Hydroelectric Power Plant, 3) optimal development and placement of permanent and temporary repair basis for railroad machine stations, 4) optimization of the plan for creation of a territorial production complex, matched to the plan of development of a construction base. 30 biblio. refs.

3/3

1/2 005 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--CEMENT MADE FROM PHOSPHORIC ACID GYPSUM PRODUCTION BYPRODUCT -U-

AUTHOR--VOLKONSKIY, B.V.

COUNTRY OF INFO--USSR

SOURCE--TSEMENT 1970, (2), 16-17

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--CEMENT, GYPSUM, INDUSTRIAL BYPRODUCT, SULFURIC ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1683 STEP NO--UR/0101/70/000/002/0016/0017

CIRC ACCESSION NO--AP0125304

UNCLASSIFIED

2/2 005 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125304

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INDUSTRIAL EXPTS. WERE MADE WITH SIMILAR TO 3000 TONS OF PHOSPHORIC ACID BYPRODUCT GYPSUM OF THE FOLLOWING COMPN. (PERCENT, CALCED. ON A DRY BASIS): CAO 39.7, P SUB2 O SUB5 1.17, SOL. P SUB2 O SUB5 0.46, F SUBTOTAL 0.4, SIO SUB2TOTAL 41.33. GYPSUM WAS DRIED AT 270DEGREES. THE MOISTURE CONTENT AFTER DRYING WAS 3.5-4.32PERCENT. DURING DRYING 50PERCENT OF THE F VOLATILIZED, DURING CALCINATION ANOTHER 25PERCENT. ABOUT 8-12PERCENT OF PHOSPHORIC ACID GYPSUM WAS CARRIED OFF WITH THE WASTE GASES. ABOUT 80PERCENT OF THIS AMT. WAS RECOVERED IN THE CYCLONES. THE REMOVAL OF MOISTURE IN THE DRYING DRUMS WAS 40-50 KG-M PRIME3 HR. PHOSPHORIC ACID BYPRODUCT GYPSUM CAN BE ADDED TO THE RAW MATERIAL MIXT. WITHOUT DRYING BUT IN THIS CASE THE SO SUB2 CONCN. IN THE ROTARY KILN GASES DECREASES, WHICH GREATLY REDUCES THE PRODUCTION OF H SUB2 SO SUB4. CEMENT IN PREPD. FROM THE FOLLOWING COMPONENTS: PHOSPHORUS SNHYDRIDE 80, SAND 10, ASHES 5, COKE 5 WT. PERCENT. THE CHARGE IS GROUND TO A RESIDUE OF 18-25PERCENT ON A SIEVE NO. 008 AND 3-6PERCENT ON A SIEVE NO. 02. CALCINATION TOOK PLACE UNDER THE SAME CONDITIONS AS WITH NATURAL ANHYD. THE OUTPUT OF H SUB2 SO SUB4 WAS 150-7 TONS-DAY AND WAS NEARLY THE SAME AS WITH NATURAL ANHYDRITE. THE PORTLAND CEMENT CLINKER WAS YELLOW OWING TO ITS CONTENT OF SULFIDE S. IT HAS A HIGH POROSITY, ALITE HAD A ZONAL STRUCTURE. PHYS. MECH. TESTS SHOWED GOOD QUALITIES FOR THE CLINKER.

UNCLASSIFIED

USSR UDC 669.187.6

NIKULIN, A. A., ARTEM'YEV, V. D., VOLKHONSKIY, L. A., KLYUYEV, M. M., TOPILIN, V. V., VOLKOV, S. YE., and SHARAPOV, A. A.

"Study of Methods of Acting on Processes of Crystallization of Ingots During Electric Slag Remelting"

Proizvodstvo Chernykh Metallov (Production of Ferrous Metals -- Collection of Works), No 75, Metallurgiya Press, 1970, pp 161-167

Translation: Results are presented from a study of the control of crystallization of an ingot by acting on the drop transfer and hydrodynamic processes in the slag and metal bath by two methods, performed on a laboratory electric slag installation. The methods are remelting of electrodes moving eccentrically relative to the axis of the crystallizer, and remelting of electrodes in a longitudinal constant magnetic field, created by a solenoid wound around the cover of the crystallizer and supplied by a controlled direct current source. 3 figures; 2 tables; 5 biblio. refs.

1/1

VOLKOMOROV, V. I.

(3)

So: JPRS 57610
25 JULY 1973

UDC 678:539.4.019.3

EFFECT OF A FILLER ON THE STRENGTH CHARACTERISTICS OF THERMOSETTING POLYMERS

[Article by V. I. Pavlenko, V. I. Volkomorov, V. I. Murzvich, Leningrad Mechanics Institute; Riga, Mekhanika Polimerov, Russian, No 1, 1973, submitted 16 November 1972, pp 97-101]

A study was made of the effect of a filler on the tensile strength characteristics of polymers. The thermostructural stresses occurring in the composite during its congelation are taken into account. The relations are presented which define the strength of the filled polymer as a function of the percentage content of filler. During the process of analyzing the thermostructural stresses, the analytical relation was obtained for the coefficient of linear expansion of the composite considering the structural distribution of its components. The calculated values are presented for the strength and thermostructural stresses for composites with different filler content. The theoretical definition of the strength of filled polymers is compared with the presented experimental studies of the composites based on epoxy resin filled with powdered quartz. There are three illustrations and a ten-entry bibliography.

The problem of discovering the contribution of a filler to the strength characteristics of a composite material plays an important role in the problems connected with studying the effect of the filler on the properties of the composite polymers.

In reference [1], a study was made of various theories of the strengthening effect of fillers. At the same time, it is impossible not to agree with the opinion of the authors [2], who considered that the term "strengthening" is expediently used when characterizing the specific property of the given filler-binder ratio. Actually, as is demonstrated in [3], the name filler with different ratio to the binder can "strengthen" or "weaken" certain composition characteristics.

For materials reinforced with fibrous, the mathematical apparatus has been developed which permits determination of their mechanical properties by

the component properties. An estimate of the contribution to the properties of the composite material by the dispersed fillers such as powdered quartz has basically been made experimentally [2-4].

In this paper an effort has been made to discover the mechanism of the operation of filled polymers under tension. In order to solve the stated problem, the approach developed as applied to the determination of the tensile strength of the fiberglass reinforced polymers normal to the fibers is used. The justifiability of this approach can be explained by the identity of the stressed states of the compared materials and the contribution of the filler and reinforcing to the strength characteristics of the composite materials.

The strength of the composite materials must be estimated considering the stresses arising during their manufacture which are basically thermostructural [5]. The problem of the thermostructural stresses, that is, the stresses arising as a result of a difference in the coefficients of linear expansion of the filler and the binder on cooling of the composition material from the operating temperature to the operating temperature for reinforced plastics found reflection in references [6-8].

In the given paper, an estimate is made of the magnitude of the thermostructural stresses and a function of the percentage content of filler and binder, and their effect on the strength characteristics of the composition materials is determined.

In the mathematical model (Figure 1) adopted in this paper, the assumption is made of regularity of the system of arrangement of the filler particles. It is based on analyzing the photographs of the microsections, for example, in [2] and the insignificant difference in characteristics for regular and arbitrary arrangement of the reinforcing fibers in the fiberglass [6].

Figure 1. Adopted scheme for the filler particle distribution in the binder.

USSR UDC 620.193:669.296

GROMOVA, A. I., GERASIMOV, V. V., KABANKOVA, N. A., SHUT'KO, I. G., and VOLKHONSKIY, YE. V.

"Corrosion and Electrochemical Behavior of Zirconium-2.5 Percent Niobium Alloy in Water and Steam at High Temperature"

Moscow, Atomnaya Energiya, Vol 29, No 5, Nov 70, pp 364-365

Abstract: A study was made of the corrosion and electrochemical behavior of zirconium-2.5 percent niobium alloy in water of varying composition at 285° C. In a deaerated environment at ~300° C the passive region remains up to + 1.8 (NHE). Higher positive potentials are marked by transition to the transpassive region. An increase in the pH of the deaerated environment to 10 (compared to pH = 7) does not intensify corrosion of the alloy during irradiation or outside the reactor. The presence of ammonia (pH= 10) and oxygen in the water at 300° C increases the alloy corrosion rate.

1/1

Electronic Materials

USSR

UDC 621.317.39:531.7

SHNEYDER, A. YU., ZHURAVLEV, V. S., Candidates of Technical Sciences, VOLKINSHTEYN, YE. M., KOLESNIKOVA, I. N., Engineers

"Pressure-Sensitive Sensors made of Electrically Conducting Polymers"

Moscow, Pribory i Sistemy Upravleniya, No 2, 1972, pp 40-41

Abstract: The design and operating characteristics are presented for a pressure-sensitive sensor built at the Central Scientific Research Institute of Prosthetics and Orthopedic Appliances. The sensor is made of porous polymer material (sponge rubber, porolon, and so on) impregnated with various electrically conducting compounds (resins, enamels, and so on). The operating principle of the element is compared with the operating principle of sensors with carbon columns. The dispersion zone of the load characteristics of a series of 10 sensors is plotted, and oscillograms are presented analysis of which shows that the characteristics of the developed sensor repeat the shape of the characteristics of a strain gage. The sensor permits recording of processes taking place with frequencies to 6-8 hertz. Both the static and dynamic characteristics of the sensors are presented. A study of the static characteristics showed that on variation of the pressure from zero to 0.8 kilogram-force/cm^2, its resistance varies within the range of 100-2 kilohms.

1/1

USSR UDC 669.244

VOLKOGON, G. N., Orsk

"Desulfuration of Nickel by Rare Earth Metals"

Moscow, Izvestiya Akademii Nauk USSR, Metally, No 4, Jul/Aug 72, pp 67-71

Abstract: The rules governing the kinetics of the desulfuration process of nickel by rare earth metals were determined. The process consists of melting and dissolving the desulfurator-metal, the desulfuration reaction, and the elimination of reaction products from the sphere of interaction of rare earth metals with nickel sulfides. The interrelationship between the quantity of the addition and the quantity of S in the metal and the effect of the temperature on the desulfuration process was determined. On the basis of established temperature dependent changes of isobaric potentials of La and Ce sulfides, the affinities of La and Ce with S in Ni can be evaluated. Rare earth metals proved to be effective desulfurators. As the maximum change of the isobaric potential goes with the development of La_2S_3 and Ce_2S_3 sulfides, it is assumed that these are the most probable reaction types of sulfides in Ni. Results of the Phase analysis confirm this assumption. Two illustrations, one table, one formula, eleven bibliographic references.
1/1

USSR

UDC: 621.374.5(088.8)

VOLKOGON, V. P., SITNIKOV, L. S., UTYAKOV, L. L.

"A Wide Pulse Shaper"

USSR Author's Certificate No 265185, filed 4 Mar 68, published 17 Jun 70 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1G264 P)

Translation: The proposed transistorized wide pulse shaper utilizes the effect of charge accumulation in PN junctions. The device contains a saturated shaping stage with a transistor switch as a controlling leakage resistance, and a matching emitter follower. To reduce the duration of the trailing edge of the shaped pulses, the output of the emitter follower is connected through a differential network to the base of the switching transistor.

1/1

USSR

UDC: 51

Predius, M. M., Volkolupova, R. T.

"Mathematical Description of Flow Distribution in a Grid System"

Pribory i Sistemy Avtomatiki. Resp. Mezhved. Temat. Nauch.-tekhn. Sb. [Automation Devices and Systems. Republic Interdepartmental Thematic Scientific and Technical Collection], 1972, No 24, pp 165-170 (Translated from Referativnyy Zhurnal Kibernetika, No 11, 1972, Abstract No 11V498, by the authors)

Translation: A mathematical description and model of processes of gas distribution in a complex gas collecting network are studied. A system of nonlinear algebraic equations is produced, reflecting the interaction of variable factors in the process in question.

1/1

USSR

UDC: 533.6.001.5

VILENSKIY, F. A., VOLKONSKAYA, T. G., GRYAZNOV, V. P., PIRUMOV, U. G., Moscow

"Investigation of Nonstandard Flow Conditions in an Axisymmetric Annular Plug Nozzle"

Moscow, Izv. AN SSSR: Mekhanika Zhidkosti i Gaza, No 4, Jul/Aug 72, pp 94-101

Abstract: The paper presents the results of calculations and experimental study of nonstandard flow conditions in an annular plug nozzle when the external pressure p_{ex} exceeds the pressure p^o determined in the one-dimensional approximation from the ratio of the area of the output section of the nozzle to the area of the critical cross section. The method of characteristics is used to calculate the gas flow in the annular region enclosed between the free boundary and the edge of the plug under nonstandard conditions when $p_{ex} > p^o$. An experimental study is made of the flow, during which the static pressure was measured on the wall of the nozzle, and shadow photography was used to visualize the flow. The results of the experimental and theoretical study are given for a ring nozzle with $M^o = 3.71$ and an ideal gas with constant adiabatic exponent 1.4.

1/1

USSR

UDC:521.719.2:621.378.9

VOLKONSKIY, V. B., NESTEROVA, Z. V., POPOV, Yu. V., CHERNYAYEV, A. I., YAKOVLEV, V. V.

"A Laser Rangefinder with Super-High-Frequency Modulation of Radiation and Frequency Conversion in the Photoreceptor"

Optiko-Mekhanicheskaya Promyshlennost', No 10, Oct 73, pp 22-25

Abstract: In known light rangefinders with SHF modulation of optical radiation, phase detection of the signal received is performed in the light modulator. The operating range of a laser rangefinder can be significantly increased by attaching a reflecting film to the object, the distance to which is to be measured. This article presents the results of experimental studies of a laser rangefinder with SHF amplitude modulation of the radiation, the modulation frequency convertor in the photoreceptor and phase detection at low frequency. The laser uses a helium-neon laser operating at 755 MHz. The maximum range measurement error when a film reflector is used at a range of 25 m is 0.5 mm, with a signal/noise ratio of at least 10. Automatic recording of the results of measurements on a strip-chart recorder is possible.

1/1

USSR

UDC 632.954

GRAPOV, A. F., LEBEDEVA, N. V., MEL'NIKOV, N. N., SERCEYEVA, T. A., STONOV, L. D., TITOVA, L. M., and VOLKOTRUB, E. N., All Union Scientific Research Institute of Chemical Means of Plant Protection

"A New Herbicide Called Isophos"

Moscow, Agrokhimiya, No 1, 1972, pp 96-103

Abstract: Herbicidal properties of isophos-1, $ClCH_2P(S)(NHC_4H_9\text{-sec.})(OC_6H_3Cl_2\text{-}2,4)$, and isophos-2, $ClCH_2P(S)(NHC_3H_7\text{-iso})(OCOH_3Cl_2\text{-}2,4)$, were tested on many plants, including cockspur grass (Echinochloa crus-galli), and rice grass (Echinochloa oryzicola), the weeds which commonly grow with rice. Application of 2-6 kg isophos-1 or isophos-2/ha killed 100% of the above weeds. The best time for application of the herbicides was before sowing of rice, or prior to its sprouting. A surface application produced the best results. Both types of isophos in 4-8 kg/ha doses were toxic to garden orache, amaranth, and white bent. Field pennycress, spring wild oat, and knotweed were of average sensitivity toward isophos.

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GRAPOV, A. F., et al., Agrokhimiya, No 1, 1972, pp 96-103

Among the cultivated plants, rice was most resistant toward this herbicide, followed by wheat, oats, and barley (most sensitive). Cotton, beans, radishes, and sunflowers are resistant to isophos, but sugar beets and flax are sensitive. Carrots were most resistant to isophos in doses of 1-4 kg/ha and tomatoes and cucumbers showed medium resistance. Isophos was 100% effective against rice grass in meadow-marshy, soddy-podzolic, and sierozem soils. It was only 83-97% effective in soils with high humus content. Effectiveness of isophos lasted for 30-100 days after application. Analysis of the soil horizons indicated that it remained mainly in the top 0-10 cm of soil. The structure of the aryl radical determines the phytotoxic properties of amides of thio- and dithiophosphonic acids. Presence of two Cl atoms in the phenyl group increases the herbicidal effects of these compounds.

2/2

USSR

UDC 517.946

VOLKOTSAVOV, V. F.

"On the Local Extremum Principle for a Hyperbolic Equation With Coefficients for Lower Derivatives Having a Singularity at One Point"

V sb. Materialy Itog. nauchn. konferentsii. Kuybyshev. gos. ped. in-t, 1970, Vyssh. matematika (Papers. Summation of Scientific Conference. Kuybyshev State Pedagogical Institute, 1970. Higher Mathematics -- Collection of Works), Kuybyshev, 1970, pp 23-24 (from RZh-Matematika, No 4, Apr 71, Abstract No 4B388)

Translation: An extremal property (called by the author "the local extremum principle") is formulated (without proof) for the solutions of an equation of the type

$$x(z_{xx}-z_{yy})+2\alpha z_x+2\beta z_y=0$$

in the singly-connected region D bounded by the lines $y = 0$, $x + y = 0$, $x - y = 0$, reducing to zero at the characteristic $x + y = 0$ or $x - y = 1$.
A. Nakhushev.

1/1

USSR

VOLKOV, A. A., VOLKOLUPOVA, R. T.

"The Problem of the Use of Methods of Graph Theory for Calculation of Complex Network Systems"

Pribory i Sistemy Avtomatiki. Resp. Mezhved. Temat. Nauch.-Tekhn. Sb. [Automation Instruments and Systems. Republic Interdepartmental Thematic Scientific and Technical Collection], 1973, No 26, pp 38-42 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V408, by the authors).

Translation: The principle of decomposition of graphs modeling complex network systems is studied. A method is suggested for aggregation of subgraphs into a single graph in the process of transformation of initial information on a graph into a system of equations describing the given network system. A method of selection of all and the optimal (according to a given criterion) trees of a graph, as well as calculation of this number, are studied.

1/1

USSR

UDC: 681.325.3

VOLKOV, A. A., SABAYEV, G. N.

"A Voltage-to-Code Converter"

USSR Author's Certificate No 285382, filed 16 May 69, published 12 Jan 71 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 10, Oct 71, Abstract No 10B475 P)

Translation: Converters are known which change voltage to digital code and to a voltage which varies according to a law of "triangular functions". These converters contain operational DC amplifiers, a digital-analog converter, a reversible counter, and a comparison circuit. The proposed converter, which contains two operational amplifiers, a reversible counter, a comparison circuit, switches, and a biasing source, has the following distinguishing features. The amplifier inputs are connected through the outputs of some switches to the outputs of the corresponding digital-analog converters, to the input resistors of the converter, and to the feedback resistors of the amplifiers, and through other switches and resistors to the biasing source and the outputs of the amplifiers respectively. The amplifier

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USSR

VOLKOV, A. A., SABAYEV, G. N., Soviet Patent No 285382

outputs are connected through resistors and a third group of switches to the inputs of the comparison circuits. The outputs for the first digit in the reversible counter are connected to the controlling inputs of the switches, and the one-output terminals of the flip-flops are connected to the digital--analog converters. This increases the speed and precision of the converter and reduces the amount of equipment.

2/2

USSR

UDC 622.785.004.12

BUNAKOV, O. D., and VOLKOV, A. A.

"The Use of the Electric Properties of a Sinter for Automation of the Sintering Process"

Proizvodstvo Chernykh Metallov (Production of Ferrous Metals - Collection of Works), No 75, Metallurgiya Press, 1970, pp 8-14

Translation: Data are presented on the measurement of the electric conductivity of the sinter in the cup, the change of conductivity of the sinter with time, and the influence of fuel on the electric properties of the sinter. The relationship of resistivity of the sinter to its strength and charge composition is indicated. 3. figures; 3 tables; 2 biblio. refs.

1/1

USSR

UDC 621.396.622

VOLKOV, A. A., REMIZOV, YE. N.

"Selecting the Intermediate Frequencies of the Receiver for Binary Frequency Conversion Circuits with One Heterodyne"

Tr. Mosk. in-ta inzh. zh.-d. transp. (Works of the Moscow Institute of Railroad Transportation Engineers), 1970, vyp. 30, pp 132-136 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9D21)

Translation: In this article a procedure is proposed for determining the heterodyne frequencies and first intermediate frequency with respect to a given second intermediate frequency, and the signal frequency. Relations are obtained which relate the mentioned frequencies to each other for all possible cases. By the given second intermediate frequency, the harmonic number of the heterodyne and the frequency, it is possible to calculate the first intermediate frequency and then check the exclusion of combination noise in the signal reception channel graphically. The bibliography has two entries.

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USSR

UDC 51

VOLKOV, A. A., KOLOMIYETS, B. K.

"Logical Principles of Constructing Active Hierarchical Systems"

V sb. Detsentralizovan. metody upr (Decentralized Methods of Control--collection of works), Moscow, 1972, pp 134-148 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V380)

No abstract

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USSR

VOLKOV, A. F., KOGAN, Sh. M. (Institute of Radio Engineering and Electronics, USSR Academy of Sciences)

"Collisionless Relaxation of the Energy Gap in Superconductors"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, November 1973, pp 2038-2046

Abstract: Equations for the Green functions with coinciding times are derived which describe the dynamics of superconductors over a period of time which is small compared with the electron energy relaxation times τ_{ph} and τ_{ee}. The time evolution of small initial perturbations of the order parameter Δ is investigated. It is found that for initial perturbations of a certain type the energy gap relaxes only at the expense of inelastic electron collisions during times of the order of τ_{ph} and τ_{ee}. In the general case the order parameter for $t \ll \tau_{ph}, \tau_{ee}$ oscillates with a frequency $\sim 2\Delta$ and an amplitude which asymptotically decays with time according to a power law.

The article includes 30 equations and one figure. There are nine references.
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USSR

UDC: 681.32.001

BURTOV, A. I., PETROV, V. A., SAVUSKIN, V. V., SHAGULIN, V. I., VOLKOV, A. F., SOROKIN, G. K., TRAPEZNIKOV, V. A., CHEGLAKOV, Ye. A., CHERKAREV, Yu. D.

"A Device for Determining the Region of Operability of a Digital Computer With Respect to Supply Voltages"

USSR Author's Certificate No 291206, filed 7 Aug 68, published 29 Mar 71, (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 10, Oct 71, Abstract No 10B146 P)

Translation: There is a well-known device which determines the region of operability of a digital computer with respect to supply voltages. This device contains a control unit, voltage commutation module, an element for controlling the sign of the independent voltage increment, and a device for visual display. However, such devices are incapable of monitoring the changes in digital computer elements which occur as a result of various ambient factors while the computer is in operation. To speed up determination of the limits of the region of operability and improve the reliability of measurements, the signal input of the element for controlling the sign of the independent voltage increment in the device introduced by this Author's Certificate is connected to the output of the voltage commutation module, while the controlling input and the

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output of the sign controller are connected to the control unit, the auxiliary output of the control unit being connected to the device for visual display, which is connected in turn to the voltage commutation module. This enables observation of the change in the region of operability of the digital computer with respect to supply voltages during operation, as well as evaluation of various computer characteristics (e.g., the availability factor, operability margin with respect to drift of element parameters, operating stability with respect to random perturbations of the power supply and the ambient medium). One illustration.

2/2

1/2 042 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--CURRENT VOLTAGE CHARACTERISTIC OF AN IRRADIATED SUPERCONDUCTING POINT CONTACT -U-
AUTHOR-(02)-VOLKOV, A.F., NAD, F.YA.

COUNTRY OF INFO--USSR

SOURCE--JETP LETTERS (USA), VOL. 11, NO. 2, P. 92-7 (JAN. 1970)

DATE PUBLISHED-------70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., PHYSICS

TOPIC TAGS--VOLT AMPERE CHARACTERISTIC, IRRADIATION EFFECT, MODEL, SUPERCONDUCTOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/1092 STEP NO--US/0000/70/011/002/0092/0097

CIRC ACCESSION NO--AP0136512
UNCLASSIFIED

2/2 042 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136512

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS CALCULATE ON THE BASIS OF THE MODEL PROPOSED BY ASLAMAZOV AND LARKIN (IBID., 9, 87 (1969) THE I(V) CHARACTERISTIC UNDER IRRADIATION, PARTICULARLY NEAR THE VERTICAL STEP AT V EQUALS HW-ZE, AND COMPARE THE RESULT WITH EXPERIMENT. THEY HAVE FOUND THAT V(I) IS A SINGLE VALUED FUNCTION AND THEREFORE THE FORM OF THE OBSERVED CURRENT VOLTAGE CHARACTERISTIC IS INDEPENDENT OF THE MEASUREMENT CONDITIONS. FACILITY: USSR ACAD. SCIS.

UNCLASSIFIED

1/2 034 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--VOLT AMPERE CHARACTERISTICS OF A SUPERCONDUCTING POINT CONTACT DURING IRRADIATION -U-

AUTHOR-(02)-VOLKOV, A.F., NAD, F.YA.

COUNTRY OF INFO--USSR

SOURCE--PIS'MA ZH. EKSP. TEOR. FIZ. 1970, 11(2), 92-7

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--SUPERCONDUCTOR, VOLT AMPERE CHARACTERISTIC, IRRADIATION EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0857 STEP NO--UR/0386/70/011/002/0092/0097

CIRC ACCESSION NO--AP0104293

UNCLASSIFIED

2/2 034 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0104293

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A PREVIOUSLY REPORTED MODEL AND THEORETICAL APPROACH (ASLAMAZOV, 1969) TO A SUPERCONDUCTING POINT CONTACT WERE APPLIED FOR THE EVALUATION OF THE V-A CHARACTERISTICS OF A POINT CONTACT SUBJECTED TO IRRADN., AND RESULTS COMPARED WITH EXPTL. DATA. THE RESP. MATH. EQUATIONS WERE ANALYZED, AND AFTER SUBSTITUTIONS AND TRANSFORMATION, 2 EXPRESSIONS DEFINING THE V-A RELATION WERE OBTAINED. THE V-A RELATION OF NB-NB POINT CONTACTS UNDER IRRADN. WAS DETD. EXPTL. UNDER GALVANOSTATIC OR POTENTIOSTATIC CONDITIONS. THE PRESSURE AT THE POINT WAS ADJUSTABLE. EXPTS. WERE CARRIED OUT AT A CONTACT RESISTANCE OF SIMILAR TO 1 OHM AND A PRESUMED POINT RADIUS OF 3 TIMES 10 PRIME NEGATIVE6 CM. THE CONTACTS WERE IRRADIATED AT 4.2DEGREESK WITH A 10 PRIME NEGATIVE5-10 PRIME NEGATIVE8-W SOURCE AT WAVELENGTHS OF 2 AND 4 MM. THE CONTACT WAS SWITCHED TO THE LOW OHMIC (10 PRIME NEGATIVE2 OHM) OUTPUT STAGE OF THE GENERATOR WITH A 10 PRIME NEGATIVE1 OHM RESISTOR IN SERIES TO CHECK THE CURRENT. THE V-A CURVES WERE TRACED OSCILLOGRAPHICALLY IN THE PRESENCE OR ABSENCE OF IRRADN. AND COMPARED. DURING IRRADN., A KINK APPEARED IN THE CURVES. QUAL., THE SHAPE OF THE CURVES WAS NOT AFFECTED BY IRRADN. BUT A SHIFT WAS OBSD. IN THE STUDIED WAVE BAND. IF IRRADN. WAS CARRIED OUT AT A HIGHER POWER, THE V-A CURVES SIMULATED A PURELY OHMIC DEPENDENCE AND NO KINKS WERE OBSD. EXPTL. RESULTS AGREE WELL WITH THEORY. THE PROPOSED MODEL IS APPLICABLE TO THE NB-N3 POINT CONTACT.

UNCLASSIFIED

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USSR

BURTOV, A. I., GRUSHVITSKIY, R. I., METTER, E. Ya., PETROV, V. A., PLATONOV, V. V., SAVUTKIN, V. V., VEDESHENKOV, V. A., VOLKOV, A. F., ZENKIN, V. D., LIKHONINSKIY, V. S., and SOROKIN, G. K.

"Computer Device"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 27, 1972, p 162, No (11) 351216

Translation: This patent describes a computing device containing resolving modules with decoupling cells at the power supply inputs. It also has a control block connected to the inputs of a switching block and an efficiency indicator. Every output of the switching block is connected to the control input of one of the decoupling cells, thus improving the reliability of the device.

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USSR

UDC 632.155

KOROTKOVA, O. A., and VOLKOV, A. I.

"Routes of Pesticide Transformations in the External Medium and the Problem of Residues"

Moscow, Zhurnal Vsesoyuznogo Khimicheskogo Obshchestva imeni D. I. Mendeleyev, Vol 18, No 5, 1973, pp 552-562

Abstract: A review with 104 references devoted to the problem of the ability of external medium to get rid of the pesticide residues using examples consisting of chloroorganic, organophosphoric compounds, and derivatives of carbamic acids. The review also covers the mechanism of their circulation and the dynamics of residues found in the external medium. It has been shown to be possible to avoid accumulation of pesticide residues in the external medium by a planned rotation of individual agents.

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VOLKOV, A.I.

JPRS 59008
6 Oct 73

II-9. THERMODYNAMICS OF THE PROCESS OF CRYSTALLIZING FILMS OF $A^{II}B^{VI}$ COMPOUNDS BY THE GAS TRANSPORT REACTION METHOD

(Article by A. I. Volkov, I. M. Morelyanskiy, Institute of Radioengineering and Electronics of the USSR Academy of Sciences, Moscow; Novosibirsk, III Simpozium po Protsessam Rosta i Sinteza Poluprovodnikovykh Kristallov i Plenok, Russian, 12-17 June, 1972, p 19)

It was demonstrated that on deposition of epitaxial layers of semiconducting $A^{II}B^{VI}$ compounds in a hydrogen current, the magnitude of the variation of the isobaric-isothermal potential ΔG can not serve as a measure of supersaturation above the surface of the substrate.

A procedure is proposed for calculating the supersaturation and the composition of the gas phase for any relations of the gaseous components.

1/2 010 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--HYDROGENATION PURIFICATION OF LIQUID PARAFFINS -U-

AUTHOR-(04)-GONCHARENKO, A.D., MARTYNENKO, A.G., VOLKOV, A.I., VOVK, L.M.

COUNTRY OF INFO--USSR

SOURCE--NEFTEPEREAB. NEFTEKHIM. (MOSCOW) 1970, (3), 36-8

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--HYDROGENATION, AROMATIC HYDROCARBON, CATALYST, SULFIDE, CHEMICAL PURIFICATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/2048 STEP NO--UR/0318/70/000/003/0036/0038

CIRC ACCESSION NO--AP0125636

UNCLASSIFIED

2/2 010 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125636

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HYDROGENATION AT 0.25-0.5 HR PRIME NEGATIVE1 AND 280-350DEGREES OF AROMATIC HYDROCARBONS (3.1PERCENT) IN PARAFFIN, D SUB20 0.7922, INITIAL B.P. 270DEGREES, 10, 50, 70, 90, AND 95PERCENT B. 287DEGREES, 315DEGREES, 331DEGREES, 354DEGREES, AND 365DEGREES, M. 23DEGREES, AND CONTG. 0.025PERCENT S WAS MAX. (90PERCENT) ON WS SUB2,NIS,FES CATALYST 3076 WITH 2000 L. H PER L. AT 50 ATM WHEN THE VOL. INPUT RATE WAS 0.25 HR PRIME NEGATIVE1 AND THE TEMP. WAS 325DEGREES. AT 60-90 ATM., AROMATIC HYDROCARBON HYDROGENATION WAS 100PERCENT WITH 1600 L. H PER L. AT 325DEGREES AND A RATE OF 0.3 HR PRIME NEGATIVE1 FOR PARAFFIN D SUB20 0.7850, INITIAL B.P. 276DEGREES, 50 AND 95PERCENT B. 300DEGREES AND 340DEGREES, M. 22DEGREES, AND CONTG. 0.024PERCENT S AND 1.7PERCENT AROMATIC HYDROCARBONS.

UNCLASSIFIED

USSR

VOLKOV, A. K., engineer

"Communications in the City of the Future"

Moscow, Avtomatika, Telemekhanika i Svyaz', No 7, Jul 70, pp 45-47

Abstract: This article presents a brief review of a report read at a symposium on communications equipment organized by the Swedish Eriksson Company in Leningrad in 1969. The author of the report, Dr. Jacobeus, foresees the appearance of telephones in public transport vehicles and small portable telephones to be carried on the person, as well as video phones, including video phones allowing facsimile transmission. He foresees significant expansion of teaching by radio and television. Video phones and facsimile transmitters will also take over transmission of daily newspapers and letters. Once communications capacities are increased, it will no longer be necessary for all the workers of an enterprise to go to work in the same building. Each employee can work from his own home, connected to the other workers by video phone and facsimile transmission. Three-dimensional color television with stereophonic sound will replace motion pictures and live performances to a great extent, although the speaker doubts whether the sound quality will be good enough to replace live orchestra concerts and operas. The modulated laser will provide sufficient

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USSR

VOLKOV, A. K., Avtomatika, Telemekhanika i Svyaz', No 7, Jul 70, pp 45-47

bandwidth capacity to bring this mass of information into each home, and the speaker foresees absolutely no problems insofar as providing the necessary frequency allocations is concerned.

1/2 018 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--MEASUREMENT OF THE CONCENTRATION OF OXYGEN DISSOLVED IN TANTALUM -U-

AUTHOR-(05)-ANUCHKIN, A.M., VOLKOV, A.K., KIDIN, I.N., ROZHNOVA, T.M., SHTREMEL, M.A.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., CHERN. MET. 1970, 13(1), 140-2

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--OXYGEN, TATALUM, SOLUBILITY, SOLID SOLUTION, REFRACTORY METAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1986/1008 STEP NO--UR/0148/70/013/001/0140/0142

CIRC ACCESSION NO--AT0102942

UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AT0102942

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DETN. OF THE CONCN. OF INTERSTITIAL SOLID SOLNS. IN REFRACTORY METALS ON THE BASIS OF THE RESIDUAL ELEC. RESISTANCE IS FASTER THAN THAT BASED ON CELL PARAMETERS, AND OFTEN MORE RELIABLE THAN METHODS USING VACUUM FUSION OR VACCUM EXT. TO AVOID ERRORS RESULTING FROM THE GEOMETRY OF THE SPECIMENTS, THE PARAMETER EMPLOYED IS CHI, THE RATIO OF THE RESISTANCES AT 2 TEMPS., CHI IS A NONLINEAR FUNCTION OF THE CONCN., BUT THE FUNCTION Z EQUALS (CHI MINUS 1) PRIME NEGATIVE1 IS A LINEAR FUNCTION OF THE CONCN. C IS THE MATTHIESSEN RULE IS OBEYED. THE RELATION Z EQUALS ALPHA PLUS QC IS EVEN MORE WIDELY VALID WITHIN ADEQUATE LIMITS OF ACCURACY. TA STRIPS CONTG. TRACES OF NB, MO, AND FE WERE ADDNL. PURIFIED BY PULSE HEATINGS (4-7 SEC) IN HIGH VACCUUM (BELOW THE M.P.) AND THE RESISTIVITY MEASUREMENTS WERE MADE AT 293DEGREESK AND 77DEGREESK BY A POTENTIOMETRIC METHOD. INITIAL VALUES OF 2.71-3.50 FOR THE RATIO CHI INCREASED TO 4.60-5.33 AFTER PURIFICATION. SAMPLES WERE DEGASSED, AND THEN SATD. WITH O FOR 5-30 MIN AT 1100DEGREESC UNDER PRESSURES OF 2-4 TIMES 10 PRIME NEGATIVE3 TORR, AND O WAS THEN REMOVED AT A PRESSURE SMALLER THAN 5 TIMES 10 PRIME NEGATIVE5 TORR. CONCN. WAS DETD. BY 3 METHODS: GRAVIMETRIC, LATTICE PERIOD, AND RESISTANCE AT 20DEGREESC. THE 3 METHODS GIVE COMPATIBLE RESULTS.

UNCLASSIFIED

USSR

VOLKOV, A. M.; SKROTSKIY, G. V.

"Effects Appearing in the Capture Zone of a Ring Laser"

Leningrad, Optika i Spektroskopiya; November, 1970; pp 965-9

ABSTRACT: For a ring laser operating partly in an isotropic medium the authors find relationships determining the dependence of the difference in phase of counterwaves and the rotation angle of the plane of light polarization on its rotational angular velocity. The effect of the stationary gravitational field caused by a rotating mass on the difference in phase of counterwaves and the rotation of the polarization plane is studied. It is shown that a static gravitational field in the first approximation does not change the state of light polarization in a ring laser.

The article includes 8 equations. There are 7 references.

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USSR

UDC 591.18

POPOV, A. K., VOLKOV, A. M., ARUTYUNOV, S. K., and LOBUSOV, Ye. S., Institute of Biomedical Problems, Ministry of Public Health USSR, Moscow Aviation Institute imeni S. Ordzhonikidze, and Moscow Higher Engineering Technical School imeni N. E. Bauman

"Mechanisms of Spontaneous Rhythmic Activity of the Cerebral Cortex"

Moscow, Doklady Akademii Nauk SSSR, Vol 193, No 1, Jul/Aug 70, pp 245-247

Abstract: A discussion is presented of possible models in which stimulation of the cortex evokes depolarization of dendrites and excitation of internuncial neurons, which in turn show an inhibiting effect followed by hyperpolarization of dendrites. The process represents the beginning of rhythmic activity. It is assumed that the spontaneous rhythmicity of the isolated cortex is the result of bioelectrical sequential changes in the types of interactions between the dendrites and the internuncial neurons. In other words, the possibility of cortical rhythm exists because of the structural connections of the elements composing it. Thus, the systems and the subsystems interact. On the basis of analysis and the results of the modeling procedures, it is assumed that the spontaneous rhythmic activity of the nerve structures of the cortex is ensured

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520016-0"

USSR

POPOV, A. K., et al, Doklady Akademii Nauk SSSR, Vol 193, No 1, Jul/Aug 70, pp 245-247

by a mechanism of strict sequential change in the types of interactions of the form

$$A \underset{+}{\overset{+}{\rightleftarrows}} B \rightarrow A \underset{+}{\overset{-}{\rightleftarrows}} B \rightarrow A \underset{-}{\overset{-}{\rightleftarrows}} B \rightarrow A \underset{-}{\overset{+}{\rightleftarrows}} B \text{ и т. д.,}$$

where A and B are mutually interacting subsystems.

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1/2 040 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--ROTATING RING RESONATOR IN A GRAVITATIONAL FIELD -U-

AUTHOR-(02)-VOLKOV, A.M., KISELEV, V.A.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58, NR 5, PP 1857-1861
DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--RESONATOR, GENERAL RELATIVITY THEORY, ELECTROMAGNETIC WAVE, VECTOR, TRAVELING WAVE, GRAVITATION FIELD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/0026 STEP NO--UR/0056/70/058/005/1857/1861

CIRC ACCESSION NO--AP0127676

UNCLASSIFIED

2/2 040 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0127676

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF A GRAVITATIONAL FIELD ON THE EIGEN FREQUENCIES OF A ROTATING RING RESONATOR IS INVESTIGATED ON BASIS OF GENERAL RELATIVITY THEORY AND ELECTROMAGNETIC THECRY FCR CONTINUOUS MEDIA. THE COVARIANT EQUATIONS OF PROPAGATION OF ELECTROMAGNETIC WAVES IN A MEDIUM WHICH IS AT REST IN A ROTATING REFERENCE SYSTEM IN THE PRESENCE OF A GRAVITATIONAL FIELD ARE WRITTEN DOWN IN VECTOR FORM. THE EQUATIONS ARE SUED FOR STUDYING THE RESONANCE PROPERTIES OF A RING OPTICAL RESONATOR. FORMULAS FOR THE FREQUENCY SHIFT OF TRAVELLING WAVES AND FOR THE FREQUENCY DIFFERENCE OF OPPOSITE WAVES IN A RESONATOR WITH A NONMUTUAL ELEMENT ARE DERIVED FOR PLANE ELECTROMAGNETIC WAVES PROPAGATING IN A ROTATING RING RESONATOR. IT IS SHOWN THAT FOR LOW RESONATOR ROTATION VELOCITIES THE FREQUENCY DIFFERENCE FCR OPPOSITE WAVES DUE TO A STATIC GRAVITATIONAL FIELD IS GREATEK THAN THE EFFECT DUE TO RESONATOR ROTATION BY SEVERAL ORDERS OF MAGNITUDE. THE EFFECT OF A STATIONARY GRAVITATICNAL FIELD CREATED BY A ROTATING MASS OF THE EIGEN FREQUENCIES OF A RING RESONATOR IS ALSO CONSIDERED. FACILITY: MOSKOVSKIY FIZIKO-TEKHNICHESKIY INSTITUT.

UNCLASSIFIED

USSR UDC 681.332.65

VOLKOV, A. N., and SHTRANIKH, I. V., Physics Institute imeni P. N. Lebedev

"Device for Comparing Binary Codes"

USSR Authors' Certificate No 309360, Cl. G 06 f 7/04, filed 26 Sep 69, published 13 Aug 71 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 5, May 72, Abstract No 5B186P)

Translation: Many-valued answer parsing logic devices, which present at one of three outputs ($>$, $<$, $=$) a signal of noncorrespondence ($>$ or $<$) between two code numbers or a signal of their equality ($=$), are used to perform operations of associative code comparison. The proposed device differs in that in it the multidigit logic circuit in each digit uses two opposing voltage-stabilizing tubes connected to the voltage-stabilizing tubes of the next digit through a parallel-connected resistor and capacitor. The anode of the low-order digit voltage-stabilizing tube is connected through the resistor to the zero line. The anode of the high-order tube is connected to the output line of the device. This simplifies the device and makes it more reliable.

1/1

USSR

UDC 669.15-196.5:669.017.3

VOLKOV, A. N., Kostroma Agricultural Institute "Karavayevo"

"Transformations in the Surface Layers of Manganese Cast Iron With Abrasive Wear"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 12, 1970, pp 12-14

Abstract: It is suggested that the high wear resistance of manganese cast iron is due specifically to decomposition processes occurring in the surface layer during service. X-ray diffraction study has shown that abrasive wear of parts from ICh07Ch, ICh09Ch, ICh11Ch, ICh11M, and ICh11U cast irons effects a - transformation (austenite is transformed to martensite), a slight decrease in the lattice parameter, a reduction in the size of crystal blocks, and an increase of microdistortions. Data on the phase compositions of thin surface layers of parts made from cast iron as cast are presented in a table. The least wear is exhibited by parts made from cast iron with 11% Mg and high content of carbon. The highest wear is shown in all tests by parts from ICh11 with lamellar graphite.

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1/2 012 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--DIACETYLENE DERIVATIVES. XVII. SYNTHESIS OF OMEGA,PHENYLENYNE AND OMEGA,PHENYLENEDIYNE ETHERS, THIO ETHERS, AND AMINES -U-

AUTHOR-(04)-VOLKOV, A.N., SKVORTSOV, YU.M., DANDA, I.I., SHOSTAKOVSKIY, M.F.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(5), 897-902

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ACETYLENE, CHEMICAL SYNTHESIS, THIOL, ETHER, CONDENSATION REACTION, HYDROGENATION, AMINE DERIVATIVE, AROMATIC AMINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1332 STEP NO--UR/0366/70/006/005/0897/0902

CIRC ACCESSION NO--AP0135006

UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0135006

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONDENSATION OF PHC TRIPLE BOND CC TRIPLE BOND CH (I) WITH RGH (R IS ET, BU) IN THE PRESENCE OF KOH GAVE 65-70PERCENT PHC TRIPLE BOND CCH:CHOR. SIMILARLY (WITH RSH), PHC TRIPLE BOND CH:CHSBU AND PHC TRIPLE BOND CCH:CHSR PRIMEER PRIMEI EQUALS CYCLOHEXYL) WERE PREPD. THE REACTION OF PHC TRIPLE BOND CBR WITH RCCH:CHC TRIPLE BOND CH GAVE PHC TRIPLE BOND CC TRIPLE BOND CCH:CHOR. ANALOGOUSLY, PHC TRIPLE BOND CC TRIPLE BOND CCH:CHSET WAS PREPD. THE SEALED TUBE REACTION BETWEEN I AND HNET SUB2 GAVE PHC TRIPLE BOND CCH:CHNET SUB2. THE HYDROGENATION OF THE ABOVE COMPDS. GAVE THE EXPECTED SATD. ETHERS AND THIO ETHERS.

FACILITY: IRKUTSK. INST. ORG. KHIM., IRKUTSK, USSR.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--30OCT7(

TITLE--DIACETYLENE DERIVATIVES. 17. SPECTRAL STUDY OF THE MULTIPLE EFFECT OF HETEROATOMS AND MULTIPLE BONDS IN ENYNE SYSTEMS -U-

AUTHOR-(04)-SHERGINA, N.I., GOLOVANOVA, N.I., NIKOLSKAYA, A.N., VOLKOV, A.N.

CCUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (3), 546-9

DATE PUBLISHED----------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ACETYLENE HYDROCARBON, IR SPECTRUM, UV SPECTRUM, CONJUGATE BOND SYSTEM, CYCLIC GROUP

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0740 STEP NO--UR/0062/70/000/003/0546/0549

CIRC ACCESSION NO--AP0124410

UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--30OCT7(

CIRC ACCESSION NO--AP0124410

ABSTRACT/EXTRACT--(U) GP-0- FOR. SHOWN ON MICROFICHE. THESE COMPDS. IS REFLECTED ELECTRONIC CONJUGATION AND IRKUTSK. INST. ORG. KHIH., IRKUTSK, USSR.

ABSTRACT. IR AND UV SPECTRA WERE REPORTED GENERALLY THE NATURE OF THE HETERO ATOM IN IN THE ETHYLENE BANDS, INVOLVING BOTH THE INDUCTIVE EFFECT.

FACILITY:

UNCLASSIFIED

USSR

UDC 621.385.6

VOLKOV, A.P., SHCHEDRIN, I.S.

"High-Frequency Field Or Iris Waveguide And Some Problems Of The Dynamics Of The Longitudinal Motion Of Electrons"

V sb. Uskoriteli (Accelerators--Collection Of Works), No 12, Moscow, Atomizdat, 1970, pp 105-110 (from RZh--Elektronika i yeye primeneniye, No 10, October 1970, Abstract No 10A24)

Translation: This paper is concerned with a thorough experimental investigation by means of measurements of the changes (modulation) of amplitude and phase of the longitudinal component of an electrical high-frequency field along the axis of the round iris waveguide of a linear accelerator. The results of the measurements are used for a calculation of the dynamics of the longitudinal motion of electrons in this waveguide. The nonresonant method of small perturbations is used during the measurements. The error of determination of the relative phase velocity from the measurements data $\leq$ 6 percent (can be reduced). Measurements were conducted at two sections of different waveguides with variable dimensions along the waveguide. The dependence is shown of the AM and FM high-frequency field along the axis of the waveguide, on the period of the waveguide structure, the mode of the oscillations which are used for acceleration, and the radius of the relative aperture of the iris. The calculations showed that taking account of the modulation and phase of the accelerating high-frequency field has a strong effect on the output spectrum of the accelerated electrons and on the part of the electrons captured in an acceleration regime. 7 ref. D.Ya.

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1/3 009 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--SEISMIC DATA ON STRUCTURE OF SEDIMENTS IN TATAR STRAIT, SEISMIC DATA ON STRUCTURE OF THE SEDIMENTARY LAYER IN THE SOUTHERN PART OF THE

AUTHOR-(05)-MILASHIN, A.P., SIPLATOV, V.A., YUNOV, A.YU., VOLKOV, A.P., TABOYAKOV, A.YA.

COUNTRY OF INFO--USSR

SOURCE--GELENDSHIK; MOSCOW, GEOTEKTONIKA, NO 1, 1970, PP 117-120

DATE PUBLISHED--------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--TECTONICS, SEISMIC SURVEY, SEDIMENTARY ROCK LAYER, MARINE GEOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/0052 STEP NO--UR/9066/70/000/001/0117/0120

CIRC ACCESSION NO--AP0108425

UNCLASSIFIED

2/3 0C9 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0108425

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TECTONICALLY, THE REGION OF TATAR STRAIT, BEING A CONTINUATION OF THE DEEP WATER SEA OF JAPAN BASIN, IS SITUATED IN THE TRANSITION ZONE FROM THE ASIATIC CONTINENT TO THE PACIFIC OCEAN. DURING THE SUMMER AND AUTUMN OF 1966 THE DIVISION OF MARINE GEOPHYSICAL WORK OF THE ALL UNION SCIENTIFIC RESEARCH INSTITUTE OF GEOPHYSICS FOR THE FIRST TIME CARRIED OUT MARINE SEISMIC STUDIES IN THE TATAR STRAIT BY THE METHOD OF CONTINUOUS PROFILING BY THE REFLECTED WAVES METHOD. MOST OF THE WORK WAS DONE ON THE SAKHALIN ISLAND SHELF IN THE SECTOR BETWEEN CAPE LAMANON AND THE SOUTHEASTERN SHORES OF DELANGL' GULF. WITHIN THIS AREA THREE SEISMIC PROFILES INTERSECT TATAR STRAIT FROM SAKHALIN TO THE ASIATIC CONTINENT IN A LATITUDINAL DIRECTION (FIG. 1 IS A MAP OF THE WORK AREA.) THE COLLECTED DATA INDICATE THAT THE STRUCTURE OF THE UPPER PART OF THE SEDIMENTARY COMPLEX IS CHARACTERIZED FOR THE MOST PART BY TWO GROUPS OF DEPOSITS. TH AREA CAN BE DIVIDED INTO EASTERN AND WESTERN PARTS ON THE BASIS OF THE SEISMIC DATA. THE EASTERN PART, CORRESPONDING IN GEOMORPHOLOGICAL RESPECTS TO THE SHELF NEAR SAKHALIN, IS CHARACTERIZED BY WELL EXPRESSED DISLOCATION OF THE DEPOSITS. THE DURATION OF THE SEISMIC RECORD HERE VARIES FROM 1.4-2.0 SEC, LESS FREQUENTLY 2.5 SEC, IN SYNCLINAL DOWNWARPS TO 0.7-0.9 SEC AND COMPLETE DISAPPEARANCE IN ANTICLINES. THE WESTERN PART CORRESPONDS TO THE ABYSSAL SECTOR AND THE EASTERN SLOPE OF THE STRAIT. THE SEISMIC RECORD IS CHARACTERIZED BY A GREAT DURATION, UP TO 3.0-3.5 SEC. THE STRUCTURE OF THIS REGION IS DESCRIBED IN DETAIL.

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3/3 009 UNCLASSIFIED

CIRC ACCESSION NO--AP0108425 PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--THE LAMANON-TOMARINSKAYA FOLDED ZONE, DETECTED BY THE REFLECTED WAVES METHOD, IS SITUATED WITHIN THE SAKHALIN-HOKKAIDO CENOZOIC FOLDED REGION, IN THIS SECTOR COINCIDING WITH THE SHELF SURROUNDING SAKHALIN. THE FOREDEEP OF THE TATAR STRAIT IS SITUATED TO THE WEST; IT IS GENETICALLY RELATED TO THE PRESENT DAY ABYSSAL DEPRESSION OF THE SEA OF JAPAN. THE WESTERN MARGIN OF THIS DOWNWARP IS PARTIALLY SUPERPOSED ON STRUCTURES OF THE SIKHOTE-ALIN' AND THE EASTERN SIKHOTE-ALIN' VOLCANIC ZONE. THE NEW FOLDED ZONE DETECTED ON THE SAKHALIN SHELF IN THE SAKHALIN PETROLEUM AND GAS ACCUMULATION. ALL THE DETECTED UPLIFTS ARE FOUND AT SEA DEPTHS UP TO 100 M AND MOST OF THE FOLDS ARE ACCESSIBLE FOR MARINE DRILLING. THE FOREDEEP OF TATAR STRAIT MUST BE REGARDED AS A MAJOR REGION OF PETROLEUM AND GAS FORMATION.

UNCLASSIFIED

USSR

VOLKOV, A. S., GUTKIN, A. A., IL'MENKOV, G. V., NOVAK, I. I., Physico-technical Institute imeni A. F. Ioffe, USSR Academy of Sciences, Leningrad

"Quantum Yield of the Photoconductive Effect in Germanium"

Leningrad, Fizika Tverdogo Tela, Vol 15, No 9, Sep 73, pp 2796-2797

Abstract: To explain the contradictions in previous experimental data on the quantum yield of the photoconductive effect in germanium, the authors investigate the spectrum for this semiconductor at room temperature in the photon energy region of 1-1.9 ev. The results show that within limits of experimental error of ±3% the quantum yield of the photoconductive effect of germanium in this energy region remains constant. The authors thank A. N. Imenkov, D. N. Nasledov, A. A. Rogachev, and B. V. Tsarenkov for taking part in discussion of the experimental results.

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USSR

UDC: 621.374.5

VOLKOV, A. S., CHINENKOVA, S. V.

"On the Selection of Material for Acoustic Lines in Magnetostriction Delay Lines"

Tr. uchebn. in-tov svyazi. M-vo svyazi SSSR (Works of Academic Institutes of Communications. Ministry of Communications of the USSR), 1970, vyp. 51, pp 165-172 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5G292)

Translation: The authors study the coefficient of dynamic magnetostriction, mechanical figure of merit, Curie point, reversible permeability and temperature coefficient of delay of magnetostriction delay lines made from 42NKhTYu, 44NKhTYu and N45KhT precipitation-hardened Elinvar alloys as a function of heat-treat temperature. Taking an estimate of the effect which the properties of the material of the acoustic line have on the characteristics of the delay line as a basis, the authors present recommendations on the selection of acoustic line material for different delay lines. Bibliography of six titles. Resumé.

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